

# Learning To Invest – A New Frontier

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## ABSTRACT

*The purpose of this paper is to introduce a new and innovative course in the field of Finance, promoting the notion of “hands-on” instruction through the management of real-dollars. This course solely focuses on the management of such a Student Managed Fund (SMF). Employing a seminar setting on the undergraduate level, while using the latest security analysis technology, students take part in every aspect of fund management. From the initial stages of forming an investment strategy, to the later stages of portfolio reallocation, students are grounded in reality. This paper will illustrate the objectives set forth by the professor(s) and the methods used by the students to accomplish said goals. The focus will be on the differences in risk preferences and actions due to the management of real money versus simulated “play money,” as well as the benefits garnered from such a course. In conjunction with the introduction of this new course, this research will formulate the methodology behind the use of a real-time financial analysis platform, such as SDS MarketWatch, to create and manage a portfolio. Lastly, the benefits of using such a real-time financial analysis platform will be made evident.*

**Keywords:** Student Investment Funds, Undergraduate Portfolio Methodology

## INTRODUCTION

 Financial Literacy becomes increasingly important in the United States today, it is necessary for academia to find new and innovative tools to educate our future generation. In order to promote Financial Literacy, modern teaching techniques must be developed and incorporated into the classroom to create the foundation and desire for students to want to learn the tools necessary to be financially successful in the future.

Business students studying finance have a unique opportunity in that they are able to invest real-money using the latest analytical tools. Today, there are several institutions of higher learning which give business students the opportunity to invest “real dollars.” But, in most cases, these “student managed funds” (SMFs) are typically managed through investment clubs or in a classroom setting on the graduate level. If students are introduced to such an opportunity on the undergraduate level, it is typically in a supplemental fashion, coinciding with what is taught in such a class as Investments – ignoring many aspects of the investment/portfolio management process.

As stated above, several colleges and universities across the United States have incorporated the management of “real dollars” into their finance curriculum. The most noticeable reason for this is the visibility and notoriety that a SMF generates. Business schools across the nation use this opportunity to advertise the “real world” education that students are drawing from such an experience. As defined by Neely and Cooley [2004], students actively participate in the selection of stocks and the management of a real portfolio. Thus, they gain hands-on money management experience. An indirect outcome to this notoriety is that such an opportunity acts as a recruitment tool for prospective students. Secondly, the institution has another reason to raise funds. Many institutions use the idea of a SMF to require the latest technology in their respective business school. With the advent of SMF competitions and student investment symposiums, students and faculty now have the opportunity to inspect, as well as discuss, “competing” facilities. As institutions compete for students, they must remain competitive with respect to the facilities and technologies they offer. Lastly, the SMF acts as a resume builder for those students graduating and entering the financial services industry. As a greater emphasis is placed on job placement, colleges and universities understand the importance of such a “real world” experience.

With respect to the above, though many of the institutions may share the same reasons for starting a SMF,

the actual structure and process may differ considerably. The purpose of this paper is to introduce an innovative approach to incorporating a SMF into the undergraduate finance curriculum. Understanding that job placement is a function of the undergraduate's experience, this course focuses on the methodology of portfolio management employed in today's financial markets. With the support of the proper facilities and technology, this undergraduate portfolio management course attempts to replicate all aspects of the investment process that a student may encounter once he or she is working as a fund manager, junior analyst, or registered representative. This paper illustrates the objectives set forth by the professor and the methods used by the students to accomplish specific goals. The focus will be on the differences in risk preferences and actions due to the management of real money versus simulated "play money," as well as the benefits garnered from such a course. In conjunction with the introduction of this new course, this research will formulate the methodology behind the use of a real-time financial analysis platform, such as SDS MarketWatch, to create and manage a portfolio. Lastly, the benefits of using such a real-time financial analysis platform will be made evident.

## LITERATURE REVIEW

Over the course of the last two decades there have been several articles addressing student managed funds. With respect to SMFs particular educational model, Cox and Goff [1996] outlined the benefits of investment clubs while Lawrence [1994] addressed the benefits of student investment funds. Lawrence [1994] found that most of the student management funds participants were required to register in an investment/portfolio management course either on the undergraduate or graduate level. Some courses are open to students from across the university with or without prerequisites. Such an arrangement would allow students to apply the theories learned in the classroom to the management of a "real dollar" portfolio. Of course, those student fund managers who had participated in an investment club would be able to apply such experience to the fund portfolio. Grinder et. al. [1999] suggested ways to integrate both student managed funds and investment clubs into an instructional framework, maximizing the benefits for students. The authors illustrate how investment clubs offer an informal setting where freshman and sophomores can learn the valuable skills needed to manage their own money. The more formal "financial laboratory" setting of student managed funds provides students with the opportunity to apply the lessons of financial theory.

The first research to address the organizational structure of student managed funds was Block and French [1991]. Using Texas Christian University as an example the authors point out that TCU's SMF has a student administrator, portfolio managers, and operations managers. A survey by Ary and Webster [1998] found that some SMFs use a committee structure, others used functional (accounting, public relations, etc.) organization structure, and others organized by economic sectors. Neely and Cooley [2004] find that there may be more than one fund at an institution allowing for different investment styles. Interestingly, Neeley and Cooley find that sixty percent of the SMF programs select the best student candidates and limit enrollment by using an application process.

Other research has examined funding for student managed funds. In a survey by Neely and Cooley [2004] to the 104 institutions included on the recently formed Association of Student Managed Investment Programs' (ASMIP) Survey (Lerro and Mallet [2001]), the authors found that dollar size of initial funding for SMFs varied significantly across universities. Block and French [1991] and Lawrence [1994] find that SMF funding comes from various sources to include large specific gifts from one or several individuals, gifts from corporations or foundations, gifts from university or other foundations, and gifts from many small donors. Neeley and Cooley show that some SMFs, such as the University of Texas at Austin, as reported in *Business Week*, manage funds for private clients and accredited investors under U.S securities laws.

Lastly, various literatures have addressed SMF investment policies. Neely and Cooley's [2004] survey found that 57 of the 61 SMF respondents were allowed to invest in equity with four investing in bonds only. Seventeen of the 57 were defined as equity funds and could only invest in U.S. securities. Of the remaining 40 SMFs, 27 could invest in bonds, 20 in foreign securities, 12 in options, 4 in futures and 18 in open-ended mutual funds. These newer results are in strict contrast to Ary and Webster's survey [1998] who found that while all SMFs allowed common stocks, only 16 allowed bonds, and 14 allowed mutual funds. Three SMFs allowed futures, short selling, and covered calls, and two allowed put options. Only four SMF permitted investing in foreign securities. Neely and Cooley find that twice as many respondents to their survey favored value investing as compared to those

who favored growth investing. Additionally, the number of respondents who preferred the top-down analysis approach was almost equal to that of those who preferred the bottom-up approach.

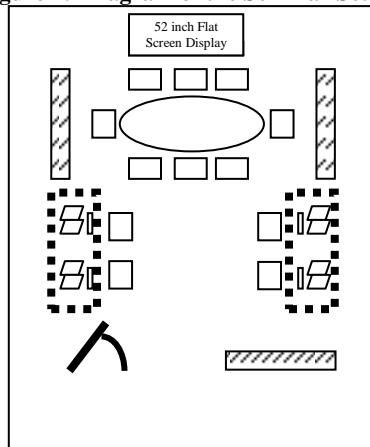
## INNOVATIVE APPROACH

As prior research will attest, many institutions of higher learning have introduced the management of real money into their respective curricula, whether through investment clubs or as a supplemental tool in classes such as Investments. Unfortunately, only a small percentage of schools have developed a course which solely focuses on the management of a SMF. In most cases, if such a course exists, it is usually restricted to the graduate level. This new approach introduces such a course on the undergraduate level. While using the latest security analysis technology in a seminar setting, students take part in every aspect of fund management. From the initial stages of forming an investment strategy, to the later stages of portfolio reallocation, students are grounded in reality. Every action, to include the actual setting, is performed in real-time, reflecting what a student may encounter once he or she is employed in the financial industry. The emphasis is to not only merge theory with practice, but to incorporate the usage of a real-time financial analysis platform into every lesson and function of the class.

### Seminar Setting

Today there are numerous trading rooms/centers throughout academia which vary not only in size, but the level of technology offered to students. The design of these rooms may vary from the traditional tiered classroom to rows of tables with computer terminals – visualize any trading floor at the major brokerages houses. Incorporating the architecture and philosophy of several private wealth management firms and fund management firms, a new design has evolved – one which creates the free flow of information throughout a room. As shown in Figure 1, the Center for Advanced Financial Education (CAFÉ) in the Gabelli School of Business at Roger Williams University has integrated this principle of shared information into a room. At each of the four computer terminals, there are four monitors which can be easily read from any seat in the room. This includes the 52-inch television/monitor which can reproduce any information on the other terminal monitors. Therefore, as one student manager conducts an analysis, other student managers in the room can visually verify any fundamental data, news and/or research on any of the monitors. The room is specifically designed so that not every student can be conducting research at one time. Rather, the conference table promotes discussion among the student managers and requires the sharing of various tasks. Student managers are assigned different places on different days to enhance various skills; rather they are qualitative or quantitative. This “real world” setting resembles that of smaller pods for various fund managers who manage specific “objective” funds under a family of funds.

**Figure 1: Diagram of the Seminar Setting**



### Real-Time Analysis Platform

For a SMF to be successful, and for the student managers to acquire “real-world” experience, it is imperative that a real-time financial analysis platform is integrated into the class. Though there are several providers of such platforms, such as Bloomberg, Reuters and Bridge/Telerate, CAFÉ has chosen to use SDS Marketwatch.<sup>1</sup> SDS Marketwatch, which is used by several financial institutions on Wall Street, combines a comprehensive package of market data, news, applications, analytics, and advanced charting to provide the student managers with real-time information necessary to make informed investment decisions. This platform was chosen for the fact that it is windows based, allowing student managers to navigate with a simple “point and click.” Using SDS, students don’t need to spend hours learning commands. In fact, the ease at which they can gather data allows them to learn more at a faster pace. For the purpose of this paper, SDS MarketWatch provides examples illustrating the necessity of real-time fundamental and technical data, as well as news.

### **Course Structure and Objectives**

Similar to the results of the Neely and Cooley survey, enrollment for the portfolio management course is selective - requiring an application process. Being the capstone course for the financial services major, only the best ten students are chosen to take this elective on a semester basis.<sup>2</sup> The key objectives of this course are: 1) to achieve an understanding of the use of key financial concepts as they relate to the creation and management of a portfolio of securities, 2) use these concepts to maximize the value of the portfolio, and 3) to achieve the deepest understanding of security markets, while applying this knowledge to portfolio and risk analysis. The other purpose of this class is to provide the resources for business students to manage a portfolio of investments with the following objectives: 1) to introduce "real world" applications to academic programs, 2) provide "hands-on" training in securities analysis and portfolio management utilizing computerized methodology, 3) develop skills fundamental to the investments industry, 4) increase students' exposure to career opportunities within the investments industry, 5) provide a more meaningful and valuable learning experience, and 6) to promote the placement of Roger Williams graduates in the securities industry. Though one may argue that such objectives are not new or innovative, they lay the foundation for this new approach. Ultimately, to develop skills fundamental to the investments industry, students must have the opportunity to manage “real dollars” under the same conditions and environment found outside the walls of academia.

### **Student Managed Fund – Role of the Professor**

Neely and Cooley [2004] ask the question, “Are you the sage on the stage or the guide on the side?” Under this innovative approach, from the very onset of the class the professor becomes the guide on the side. He or she may be responsible for presenting additional material to the class on relevant topics at each stage of the investment analysis/portfolio management process. Such topics could include risk and diversification, investor participation in financial markets, building and managing an investment portfolio, technical versus fundamental analysis, portfolio performance measures, and even the psychology of investing. In some instances, the professor may vote in the security selection process.

### **Student Managed Fund – Role of the Student Manager**

Student fund managers take on the responsibilities of financial analysts from day one. Incorporating much of what they have learned in prior corporate finance courses, capital market courses, and investment courses they are seemingly prepared to construct a portfolio from scratch. Besides the typical quantitative lessons such as fundamental and technical analysis, students also address qualitative issues in order to understand the psychology of investing and hence gain a better understanding of investor sentiment.

A major differentiation between the Gabelli School of Business SMF and those of several schools is that the subsequent classes of student managers do not inherit the prior portfolio. This practice is necessary for students to learn the entire process of portfolio management – from the initial construction phase to the monitoring and evaluation phase, as well as reallocation. Before the student managers begin the selection process, the SMF bylaws are defined and student managers are required to assess the future portfolio’s risk characteristics with respect to current and future trends of the economy – hence, value versus a growth strategy. In doing so, the student managers

set parameters for specific fundamentals, setting the initial guidelines for security selection.

## THE PROCESS

### Acquisition of News

For students fund managers to be successful investors in the ever-changing global markets they must learn to acquire and decipher all news on all levels – global, domestic, economic and financial, as well as social. A financial analysis platform such as SDS MarketWatch provides student managers with current news headlines as well as news from the following news sources: Standard & Poors (SPM), Dow Jones (DJB), Future World News (FWN), and Platt's. A link to [barchart.com](http://barchart.com) provides: 1) news (current and past headlines), 2) opinions (composite indicator, short, medium & long term indicators), 3) profile (share & company info, etc.), as well as 4) financials (financial detailed report of current stats, company percentage of industry, quarterly performance, balance sheet, and more). Such news, if combined with a television news source allows today's students to draw conclusions as to the current as well as future state companies, industries, and of the economy. What is relevant here is that students must be required to look at several different sources, including the futures news, to allow them to see how expectations may be influencing particular companies and sectors.

### Analysis Approach

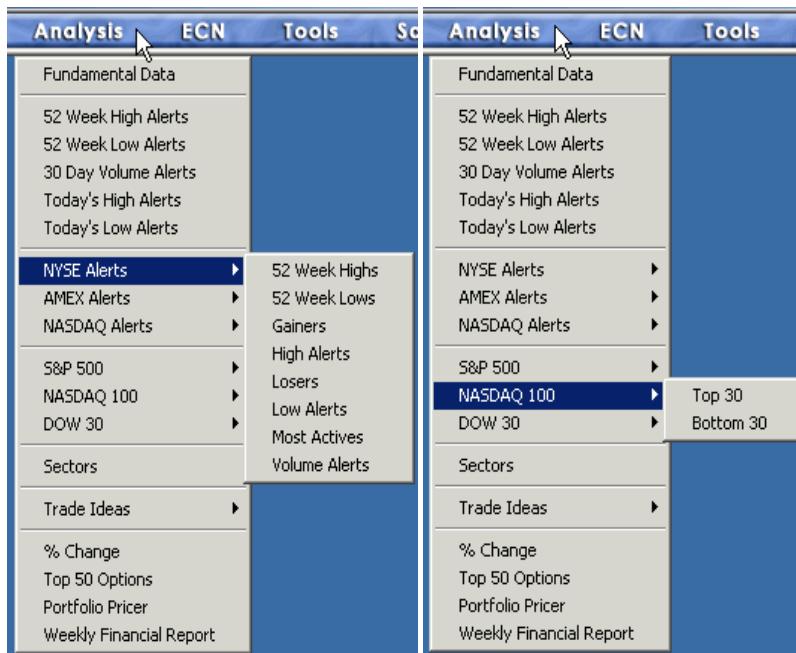
Once student managers decide on the SMF's investment strategy, they must agree on the analysis approach that will be adopted throughout the semester. Whether they employ a top-down analysis approach (economy, industry, company) or a bottom-up approach (selecting solid stocks without regard to the industry or economy), the student managers must have access to a real-time analysis platform if they are to learn the steps similar to those in the financial area. With regards to the top-down approach, Figure 2 shows how students can determine viable industries/sectors to invest in given the current state of the economy. Today, with a click of the mouse, student managers and practitioners alike are able to view sectors, industries, and indices, and the companies which comprise them. If student managers elect a bottom-up approach, SDS provides several options to locate those successful companies.

**Figure 2: Top-Down Approach incorporating the use of SDS MarketWatch**



Figure 3 illustrates two screens where student managers have the ability to seek out companies on any of the domestic exchanges meeting any of the requirements from those meeting a 52-week high, most active, positive percent change, largest total gainer, to the top 50 options. Under the section Trade Ideas, a student can discover which companies have the best Price to Earnings Ratios, lowest P/E's, and highest yields.

**Figure 3: Bottom-Up Approach incorporating the use of SDS MarketWatch**



### SMF Construction

This paper suggests the fundamental analysis employed in company selection is similar to that which has not changed over the course of the past several decades. This analysis focuses on the most traditional fundamental factors, such as Beta, Price to Earnings Ratio, Dividend Yield, Earnings per Share, 52 Week Price Volatility, Return on Assets Ratio, Return on Equity Ratio, Total Debt, Debt Coming Due, Debt Ratio, and one-three-five year Holding Period Yields. A financial analysis platform, like SDS MarketWatch, provides all of the aforementioned fundamentals through Zack's Investment Research. Additionally, Zack's provides information pertaining to the following six areas - 1) Company Profile, 2) Research Summary, 3) EPS Consensus Perspective, 4) Insider Transactions, 5) Quarterly Financial Statements, and 6) Ratios and Statistics. Although student fund managers have all of this information at their disposal, they are required to calculate such fundamentals themselves in order to learn to maintain accurate data. To provide student managers with more than one perspective on how to analyze risk, this innovative approach introduces technical analysis through the use of charting techniques, such as Relative Strength, Bollinger Bands, the MACD Oscillator, as well as various other graphical analyses. Figure 4 gives a graphical illustration. Student managers are required to calculate many of their own graphs to gain better insight into the significance of each.

To provide the foundation for mapping the proper diversification of the SMF, a correlation analysis is necessary to determine if any of the asset selections highly correlate with one another. In several instances, there may be the need to shelve many of the initial selections while requiring a re-examination process of the industry in an attempt to explore additional options. SDS provides an Excel link which allows for the download of historical data to construct the correlation matrices. Covariance matrices are also constructed in order to provide student managers with supplemental information aiding in determining the direction to which assets move in relation with one another. Lastly, a Macro through this excel link allows for the student managers to calculate the SMF's standard deviation and minimum variance portfolio. Once these tasks are completed, the SMF is constructed with the key objective being to generate the greatest amount of return given the least amount of risk.

Figure 4: Illustration of Charts



### Active Management Strategy

One of the most significant differences from the traditional “buy and hold” approach to portfolio management is the ability of the portfolio management team to monitor the portfolio on a daily basis. Many schools employ a strict buy-and-hold strategy. Unfortunately, incorporating a passive (buy and hold) management strategy would take away a significant academic lesson in portfolio management – that is, actively managing a portfolio. Student managers are taught to understand that with a properly diversified portfolio, there is no need for elaborate hedging techniques. On the contrary, there is always the need for security reallocation if particular situations arise. To better prepare student managers, an active management strategy is integrated whereby they monitor relevant news and price fluctuations while attaching stop loss orders when necessary. In order for student managers to be better equipped with the relevant tools and knowledge to succeed in today’s global environment, they must understand all aspects of portfolio management.

Figure 5 exhibits the Alert Option for SDS MarketWatch. Based on a certain criteria, this option will alert the student fund manager of real-time news and movement in price of a particular asset. Figure 6 shows the student manager’s quote page. Here the student manager can input all of the portfolio’s assets, as well as those of potential interest (up to 500 assets) in order to monitor fluctuations in such factors as Last, cNet, Bid, Ask, Open, High, Low, Bid Size, Ask Size, Cum Vol, I. Vol, Time, Y-Price, Settle, and %cNet. Lastly, SDS also gives the student managers the option to track current time and sales of any asset in real time from any exchange. This option, as shown in Figure 7, is an invaluable tool in teaching students how to forecast changes in demand as well as buy and sell opportunities.

**Figure 5: SDS MarketWatch Alert Option**

APP	Symbol	Last	cNet	I.Vol	Bid	Ask	Time	Condition
SQP	EBAY	75.29	+.43	200	75.28	75.29	14:53	Last > 75.
SQP	BMY	24.49	-.39	300	24.48	24.49	14:53	Last < 50.
SQP	INTC	26.57	+.12	400	26.56	26.57	14:53	Last <= 26.6
SQP	DTV	17.47	+.18	300	17.47	17.48	14:53	Last >= 17.

Time	SRC	Headline
15:28	DJB	DJ NASDAQ-100 Index (QQQ) Block: 400,000 Shrs At 36.48 [QQQ]
15:25	STN	NYSE \$ LOSERS 15:25 [BRK.A,PNC-D,ACH,IX,SBZ,PPS-A,YZC,CER-,BRK.B,SHI,MDC,UNT,MK]
15:25	STQ	NASDAQ MOST ACTIVES 15:25 [SIRI,INTC,MSFT,CSCO,ORCL,SUNW,TASR,AMAT,TBUS,JDSU,IP]
15:25	STA	AMEX MOST ACTIVES 15:25 [QQQ,SPY,SMH,EW],IWM,DIA,XLF,FAX,WHT,BGO,GSS,DIH,DHB,DA
15:25	STN	NYSE MOST ACTIVES 15:25 [LU,NT,NOK,GE,PFE,MCD,MOT,EMC,TXN,AMD,C,MU,TWX,KO,ELN]
15:23	DJB	DJ S&P dep. recpts (SPY) Block: 300,000 Shrs At 113.88 [SPY]
15:21	DJB	=DJ ImClone Up As BofA Predicts Robust Launch For Erbitux -2- [BMY,DNA,IMCL]
	DJB	DJ Schering-Plough New Genl Counsel Gets 250,000 Options>SGP [BAX,SGP]

Figure 6 – Portfolio Quote Page

Symbol	Last	cNet	Bid	Ask
MSFT	*47.40	+.82	47.41d	47.42d
DELL	*22.85	-.49	22.84t	22.85a
DIS	*16.45	+.10	16.44n	16.45n
AAPL	*14.38	+.23	14.36c	14.38c

Symbol	Last	cNet	Bid	Ask
VZ	*37.41	+.23	37.36e	37.43e
KKD	*28.55	+.44	28.40n	28.60n
GE	*22.63	-.07	22.63a	22.64a
AMZ	13.51	+0	13.49t	13.51n

Na	GEN ELECTRIC CO													
L	22.68	C	-.07	B	22.61n	A	22.64e	S	100:300	v	200	v	29833400	
O	22.63	Hi	22.70	Lo	22.23	Opit		Y	22.70	st1	Eps	1.73	PP	13M LAV
Div	.19	P/e	15.0	Yld	3.3	Yhi	*1.84	Ylo	21.40	QC				

Figure 7 – Current Time and Sales

MSFT - Time & Sales - Current							
TIME	MC	TRADE	INC. VOL	BID	ASK	SIZE	
12:31:17	t	46.98	300	46.98	46.99	10x52	
12:31:16	a	46.99	500	46.98	46.99	10x52	
12:31:15				46.98		6x29	
12:31:14	d	46.98	100	46.98	46.99	6x19	
12:31:14				46.98		2x19	
12:31:13	t	46.98	100	46.97	46.99	12x10	
12:31:13				46.97	46.99	17x10	
12:31:12	d	46.98	400	46.97	46.98	16x5	
12:31:11				46.97		28x20	
12:31:09	t	46.97	100	46.97	46.98	10x5	
12:31:09				46.97	46.98	10x4	
12:31:08	t	46.97	200	46.97	46.97	8x2	

### Continuous Monitoring and Evaluation

Given the active management strategy of the portfolio management team, the continuous monitoring and evaluation of the portfolio is necessary to predict and avoid any major movements in price. By adhering to an active management strategy, the portfolio management team ensures that the performance criteria fall within the set parameters of the portfolio. Student managers also integrate the use of portfolio performance measures such as Treynor's, Sharpe's and Jensen's Alpha to asses risk adjusted performance. By using various portfolio evaluation measures the student managers utilize a risk-to-reward ratio and are able to analyze the outcome of the portfolio to a much better degree. During the process of monitoring the market, it is not uncommon for student managers to view irregular market activity "after hours" in order to capture headlines as they are released in on foreign markets in an attempt to modify analysis of securities on a continuous basis. This critical step in the process is necessary to ensure that analysis will always be conducted in order to demonstrate that the portfolio stays within said parameters, and is at the most efficient and effective level.

### CONCLUSION

Today, several colleges and universities across the United States have incorporated the management of "real dollars" into their finance curriculum, either through investment clubs or in a classroom setting on the graduate level. If students are introduced to such an opportunity on the undergraduate level, it is typically in a supplemental fashion, coinciding with what is taught in such a class as Investments – ignoring many aspects of the investment/portfolio management process.

This paper introduces an innovative approach to managing a student managed fund (SMF) on the undergraduate level. The main focus of this class is to perform every action that would be required if a student fund manager had just graduated and taken a position as a junior analyst, fund manager, or registered representative in any financial institution. The major emphasis of this course is the free-flow of information, within a seminar setting, that replicates that of any practitioner arrangement in the financial field. Besides the unique opportunity of investing real money, students now have chance to be taught on real-time financial analysis platforms. From the initial stages of forming an investment strategy, to the later stages of portfolio reallocation, students are grounded in reality.

Using SDS MarketWatch to illustrate how a real-time financial analysis platform enables students to gain hands-on money management experience, this paper provides a step-by-step guide on how to merge theory with practice. The advantage to this innovative approach stems from the classroom structure of the fund. By focusing a course's curriculum on the creation and management of a portfolio under a seminar setting, it provides an opportunity for student managers to devote more time and energy into managing the portfolio, thus enhancing the research and analysis performed. It is through such a service that the student managers are able to base their investment decisions on sound principles derived from the research conducted in real-time. In addition to this, the professor of the SMF is able to incorporate their practical life experiences and lessons into the classroom which

enhances the overall academic experience.

The proper setting, class objectives, and financial analysis platform are important ingredients to making a SMF successful. In each their own way, they contribute to help regulate the flow of information that influences the day-to-day decisions of student fund managers. For example, it is extremely important to have information and financial data available at the fingertips of the student managers. It is through this flow of information that the student managers stay connected to the world of finance. When there are extreme circumstances, such as “shocks,” it is very important that the student managers maintain their current flow of knowledge in order to interpret how the news will have an impact on the company. Even then, everything is still grounded in reality.

#### AUTHOR INFORMATION

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#### ENDNOTES

<sup>1</sup> The author would like to thank SDS Financial Technologies ([www.sdsft.com](http://www.sdsft.com)) for permitting the reproduction of various screens for the use of examples in the paper.

<sup>2</sup> Those students not chosen for FNCE 450 - Portfolio Management still have the opportunity to manage a simulated portfolio through Stocktrak in FNCE 325 – Investments.

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